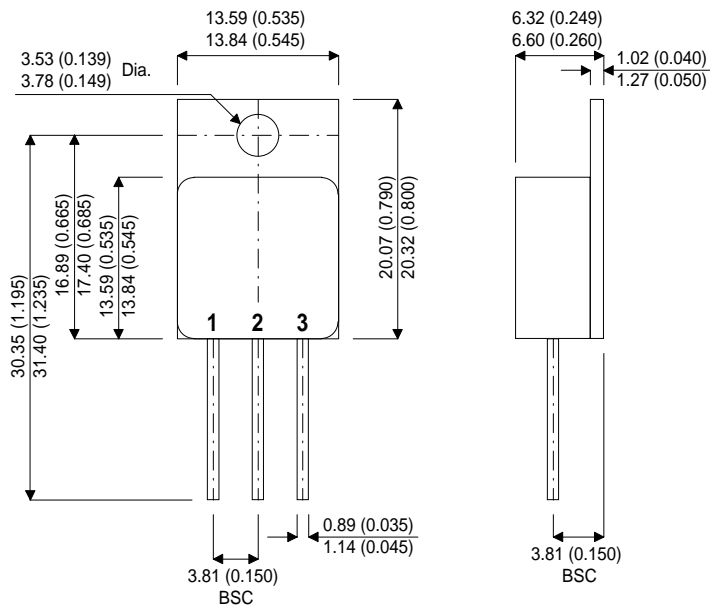


MECHANICAL DATA

Dimensions in mm (inches)



TO-254AA

Pin 1 – Drain

Pin 2 – Source

Pin 3 – Gate

**P-CHANNEL MOSFET
IN A TO254
FOR HIGH RELIABILITY
APPLICATIONS.**

V_{DSS} **100V**
 I_D **34A**
 $R_{DS(on)}$ **0.07Ω**

FEATURES

- FAST SWITCHING
- SCREENING OPTIONS AVAILABLE

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)


V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ($T_{case} = 25^{\circ}C$)	-34A
I_D	Continuous Drain Current ($T_{case} = 100^{\circ}C$)	-21A
I_{DM}	Pulsed Drain Current ¹	-136A
P_D	Power Dissipation	125W
	Linear Derating Factor	1.0W/ $^{\circ}C$
E_{AS}	Single Pulse Avalanche Energy ²	520mJ
E_{AR}	Repetitive Avalanche Energy ¹	12mJ
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55 to +150 $^{\circ}C$
$R_{\theta JC}$	Junction – Case Thermal Resistance	1.0W/ $^{\circ}C$

Notes

- 1) Repetitive rating; pulse width limited by max. junction temperature.
- 2) $V_{DD} = -25V$, $L = 3.5mH$, $R_G = 25\Omega$, $I_{AS} = -21A$, Starting $T_J = 25^{\circ}C$, $V_{GS} = -10V$

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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
$V_{(BR)DSS}$ Drain – Source Breakdown Voltage	$V_{GS} = 0V$ $I_D = -250\mu A$	-100			V
$R_{DS(on)}$ Static Drain to Source On Resistance ²	$V_{GS} = -10V$ $I_D = -21A$			0.07	Ω
$V_{GS(th)}$ Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	- 2.0		-4.0	V
g_{fs} Forward Transconductance	$V_{DS} = -15V$ $I_D = -21A$	10			S
I_{DSS} Drain to Source Leakage Current	$V_{DS} = -100V$ $V_{GS} = 0V$			-25	μA
	$V_{DS} = -80V$ $V_{GS} = 0V$ $T_J = 125^{\circ}C$			-250	
I_{GSS} Gate to Source Forward Leakage	$V_{GS} = -20V$			-100	nA
I_{GSS} Gate to Source Reverse Leakage	$V_{GS} = 20V$			100	
DYNAMIC CHARACTERISTICS					
C_{iss} Input Capacitance	$V_{GS} = 0V$		2700		pF
C_{oss} Output Capacitance	$V_{DS} = -25V$		790		
C_{riss} Reverse Transfer Capacitance	$f = 1MHz$		450		
Q_g Total Gate Charge	$I_D = -21A$ $V_{DS} = -80V$ $V_{GS} = -10V$			180	nC
Q_{gs} Gate – Source Charge				25	
Q_{gd} Gate – Drain (“Miller”) Charge				97	
$t_{d(on)}$ Turn-On Delay Time	$V_{DD} = -50V$		17	28	ns
t_r Rise Time	$I_D = -21A$		86	150	
$t_{d(off)}$ Turn-Off Delay Time	$R_G = 2.5\Omega$ $V_{GS} = -10V$		79	100	
t_f Fall Time	$R_G = 2.4\Omega$		81	120	
SOURCE – DRAIN CHARACTERISTICS					
I_S Continuous Source Current	MOSFET symbol showing the integral reverse p-n junction 			-34	A
I_{SM} Pulse Source Current ¹				-136	
V_{SD} Diode Forward Voltage ²	$T_J = 25^{\circ}C$, $I_S = 21A$, $V_{GS} = 0V$			-1.6	V
t_{rr} Reverse Recovery Time ²	$d_i / d_t \leq -100A/\mu s$		170	260	ns
Q_{rr} Reverse Recovery Charge ²	$T_J = 25^{\circ}C$, $I_F = -21A$		1.2	1.8	μC
t_{on} Forward Turn-On Time	negligible				—
PACKAGE CHARACTERISTICS					
L_D Internal Drain	Between lead, 6mm(0.25in.) from package and center of die contact			4.5	nH
L_S Internal Source Inductance				7.5	

Notes

- 1) Repetitive rating; pulse width limited by max. junction temperature.
- 2) Pulse Test: Pulse Width $\leq 300ms$, $\delta \leq 2\%$

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